<u>REMARKS</u>

This application has been reviewed in light of the Office Action dated January 17, 2008. Claims 1-9 are presented for examination, of which Claims 1, 4 and 7 are in independent form. Claims 7 and 8 have been solely to correct a typographical error noted in each. Favorable reconsideration is respectfully requested.

In the outstanding Office Action, Claims 1-9 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

We are afraid that the Examiner does not understand the term "color difference". This term is a standard one in relation to color image technology. As an example, in YCbCr (YCC) color space, a color is defined by Y (luminance) and Cb and Cr (chroma (saturation) components). Upon encoding RGB information, Cr is defined by R-Y and Cb is defined by B-Y. Cb (blue chroma component) and Cr (red chroma component) are called the color difference values (signals), because each is defined as the difference between two color-component signals that each represent one color component.

In Claims 1-9, the "first color difference value" corresponds to C1 in the preferred embodiment, and the "second color difference value" corresponds to C2 (see page 9, lines 12-14). In equation (1) at page 11, an address to be accessed in the main look-up table is obtained by performing the operation SUB_LUT[C1] + (C2-C1). On page 12, line 1, in the specification, it is stated "wherein $C1 \leq C2$". This means that the first color difference value (C1) is equal to or less than the second color difference value (C2).

SUB_LUT[C1] represents "the value obtained from the sub-lookup table by the first color difference value (C1)". The address of the main lookup table is, therefore, determined by the value (SUB_LUT[C1]) obtained from the sub-lookup table by using the

first color difference value (C1) and the difference (C2-C1) between the first and second color difference values.

The term "first and second color difference values" used in the claims, refers to the mentioned first color difference value, and second color difference value, referred to together more briefly as "first and second color difference values", following standard English usage.

Accordingly, Applicant believes that Claims 1-9 are clearly and fully supported by the specification of the present patent application, as filed, and that fully adequate antecedence for the present claim language is present.[1]

Claims 1-2, 4, 7 and 8 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patents 5,517,335 (Shu), 6,757,427 (Hongu) and 5,200,832 (Taniuchi et al.), taken in combination. Claims 3 and 9 were rejected under Section 103(a) as being obvious from *Shu*, *Hongu* and *Taniuchi* taken together, in view of U.S. Patent 5,089,882 (Kaye et al.); Claim 5, as being obvious from *Shu*, *Hongu* and *Taniuchi*, further in view of U.S. Patent 5,809,181 (Metcalfe); and Claim 6, as being obvious from *Shu*, *Hongu*, *Taniuchi* and *Metcalfe*, and further in view of U.S. Patent 6,650,336 (Suzuki).

Independent Claim 1 is directed to a color conversion method of inputting a first and second color difference values and obtaining a corresponding saturation value. The method of Claim 1 comprises steps of creating a main lookup table and a sub-lookup table, determining an address to be used in accessing the main table, and obtaining a value

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[1] While this discussion establishes that support for the claim recitations in question is indeed present in the application as filed, it is of course to be understood that the claim scope is not limited by the details of this or any other particular embodiment that may be referred to.

by addressing the table. The main look-up table is one that stores saturation values for color difference values, while the sub-lookup table is for use in the determining step. Specifically, in the determining step, the sub-lookup table is accessed, and the resulting value (SUB_LUT[C1]) is used as described below. The value SUB_LUT[C1] corresponds to a first color difference value (C1) (the two color difference values, as mentioned, are C1 and C2; the first color difference value is the one that is equal to or less than (C1 ≤ C2) the other). In the determining step, an address of the main lookup table is determined, in correspondence with the first and second color difference values (C1 and C2) on the basis of the value (SUB_LUT[C1]) obtained from the sub-lookup table by the first color difference value (C1) and a difference (C2-C1) between the first and second color difference values. Then, in the obtaining step, there is obtained a saturation value that corresponds to the first and second color difference values by accessing the main look-up table using the address determined in the determining step.

Shu relates to an apparatus that computes an average value of the RGB components, and selects a minimum value and a maximum value from among the three primary colors RGB. Shu uses a first lookup table (LUT1) and a second lookup table (LUT2), and calculates a variable delta by using a value retrieved from the LUT1 by using the average value and multiplies the retrieved value by a second value retrieved from the LUT2 by using the difference between the maximum and minimum values. Finally, the two values obtained from the LUT1 and LUT2 are multiplied together to determine the delta value (see step 420, in Fig. 4B).

In the Office Action, the Examiner states that Shu discloses obtaining a saturation value corresponding two colors difference values, at col. 6, lines 43-46, and col.

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4, lines 23-27. Applicant does not, however, agree with the Examiner's opinion. Since *Shu* defines the difference values as a difference between the maximum and minimum values of three primary color values, it is impossible for *Shu* to obtain a saturation value corresponding to the first and second color difference values.

Applicant respectfully points out that the difference between the maximum and minimum values that is computed in *Shu* is distinct from, and does not suggest, the difference between the first and second color difference values recited in Claim 1. The maximum and minimum values in *Shu*, as noted, are color-component values, and are not color-difference values, as in Claim 1.

Further, *Shu* has two LUTs, but does not determine an address of a main lookup table on the basis of the value obtained from a sub-lookup table by a first color difference value and a difference between such first and second color difference values.

That is, the difference used in *Shu* is not the difference between two color-difference signals, but the difference between two color-component signals. Moreover, even if the difference used in *Shu* were deemed for argument's sake to be the same as the difference recited in Claim 1, the difference in *Shu* is <u>not</u> used in determining an address that will be utilized in accessing a main lookup table in *Shu*, as in Claim 1.

To begin with, therefore, these two points are ones on which Applicant does not at all agree with the way in which the claim language is being read on the prior art in the Office Action. Moreover, Applicant respectfully points out that he has raised these two points at page 8 of the Amendment dated January 22, 2008. Since the Examiner has not apparently changed his application of *Shu*, therefore, it is thought that he should have explained why he believed that Applicant was mistaken on these two issues. In this

respect, at least, Applicant submits both that the outstanding Office Action is substantively incorrect (in that Applicant believes the rejection is incorrect), and is incomplete (in that applicant's argument presented previously, should have been addressed in the outstanding Office Action).

Moreover, the other art of record does not supply what is missing from *Shu* as a reference.

Kaye relates to a processor that obtains a saturation value from an EPROM by addressing the EPROM using a unique pairs of values corresponding to the incoming R-Y and B-Y signals. These signals, unlike those of *Shu*, do represent color-difference values. Any attempt to use these (or other) color-difference values in *Shu* would apparently be unsuccessful, for at least the following reason. The operations performed in *Shu* on the three color-component values are for the purpose of determining what the average of the three is, and determining which of the three is the largest and which is the smallest. Applicant submits that one of ordinary skill would be unable to use color-difference values R-Y and/or B-Y in place or any one or any two of the three signals R, G and B in *Shu* in such a manner as would still provide the information that *Shu* is designed to obtain (the value of the variable delta). That is, any attempt to substitute the color-difference values of *Kaye* for *Shu*'s color-component signals relied upon by the Examiner would fail. Thus, *Kaye*'s use of color-difference values does not, and cannot, remedy the lack of such signals in *Shu*, as any attempt to use color-difference values in *Shu* in place of the color component values would apparently render the *Shu* system inoperative.

Moreover, *Kaye* does not teach or suggest a sub-lookup table for obtaining a value corresponding to a first color difference value, as in Claim 1, and does not teach or

suggest determining an address of a main lookup table in correspondence with the first and second color difference values on the basis of the value obtained from a sub-lookup table by the first color difference value (C1) and a difference between the first and second color difference values (C1 - C2).

For these various reasons, it is believed to be clear Claim 1 is allowable over any possible combination (if there is one) of the cited teachings of *Shu* and *Kaye*.

Hongu relates to an image processing apparatus having an edge processing section for enhancing an edge portion of an image in units of picture elements to produce an edge enhanced image. Even if col. 6, lines 62-65, of *Hongu* is deemed to disclose first color difference that is equal to or larger than a second color difference, that does not supply what is missing from *Shu* and *Kaye* as prior art against Claim 1.

Further, the Examiner stated that column 6, lines 62-65 of *Hongu* discloses "determining an address of the main look-up table", but the designated portion (column 6, lines 62-65) only describes that it is determined whether the first color difference and the second color difference are equal or not. In the present invention, the determining step determines an address of the main lookup table in order to obtain a saturation value of corresponding to the first and second color difference. In the determining step, the value obtained from the sub-lookup table by the first color difference value and a difference between the first and second color difference values are used.

Taniuchi relates to an apparatus that has a lookup table (third color signal conversion means) which receives first and second color difference signals as its input and which outputs a hue signal and a chroma signal. Another lookup table (fourth color signal conversion means) receives the hue signal and the chroma signal as inputs, and outputs

first and second color difference signals. Since the first of those lookup tables (the third color signal conversion means) stores saturation values for color difference values, Applicant understands that the Examiner considers that lookup table (the third color signal conversion means) corresponds to the main lookup table of Claim 1. The sub-lookup table of Claim 1, however, stores a value corresponding to the first color difference value for accessing the main lookup table. *Taniuchi* fails to disclose or suggest such a sub-lookup table. Moreover, Applicant notes that in *Taniuchi* the number of entries of the lookup table of the third color signal conversion means for the saturation and hue angle becomes very large, and thus the *Taniuchi* apparatus encounters the same problems as those in the prior art that Applicant wishes to solve.

Accordingly, Applicant believes that the prior art relied upon in the Office Action would not have been able to lead a person of ordinary skill to the method of Claim 1. As explained above, to modify the *Shu* method to obtain the method recited in Claim 1, would require replacing the color-component values in *Shu* with color-difference values, as recited in Claim 1. Making such a modification, however, would render *Shu* totally inoperative, and thus would certainly not be a modification that would occur to a person of merely ordinary skill.

Accordingly, withdrawal of the rejection of Claim 1 under Section 103(a) is respectfully requested.

Independent Claims 4 and 7 are lookup table and processing apparatus claims, respectively, corresponding to method Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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